

I her by certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents Washington, D.C. 20231, on Aug 17, 1995

By Katie Zarzana

Katie Zarzana

Attorney Docket No. 15270-002120



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: )

PETER A. SEUBERT et al. )

Serial No.: 08/466,554 )

Filed: June 6, 1995 )

For: METHODS FOR AIDING IN THE )  
DIAGNOSIS OF ALZHEIMER'S )  
DISEASE BY MEASURING )  
AMYLOID- $\beta$  PEPTIDE (x-z41) )  
AND TAU )

Examiner: unassigned

Art Unit: unassigned

INFORMATION DISCLOSURE  
STATEMENT UNDER

37 CFR §1.97(b) and §1.98

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

The references cited on attached form PTO-1449 are being called to the attention of the Examiner. A copy of each is enclosed. Applicants are filing this statement before the mailing date of the first Office Action.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

Respectfully submitted,

*John R. Storella*

John R. Storella  
Reg. No. 32,944

TOWNSEND and TOWNSEND and CREW  
One Market Plaza  
Steuart Street Tower, 20th Floor  
San Francisco, California 94105

(415) 326-2400

JRS:kz

1802  
#4  
C. 98/11  
PATENT  
8/17/95

18C1  
18E1  
8/17

RECEIVED  
SEP 6 2 1995  
GROUP 1

Form PTO-1449 (Modified)	Docket No.: 15270-002120	Serial No.: 08/466,554
<b>LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT</b>	Applicant: P. SEUBERT et al.	
	Filing Date: June 6, 1995	Group:

Reference Designation\*

**U.S. PATENT DOCUMENTS**

Examiner Initial	*	Document No.	Date	Name	Class	Sub-Class
	AA	4,666,829	05/19/87	Glenner et al.	435	6
	AB	5,387,742	02/07/95	Cordell	800	2

**FOREIGN PATENT DOCUMENTS**

Examiner Initial	*	Document No.	Date	Country	Translation	Class	Sub-Class
	AC	WO 90/12870	11/1/90	PCT	Y		
	AD	WO 90/12871	11/1/90	PCT	Y		
	AE	WO 93/14200	7/28/93	PCT	Y		

**OTHER ART (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)**

AF		Glenner and Wong (1984) Biochem. Biophys. Res. Commun. 120:885-890.
		Alzheimer's Disease: Initial Report Of The Purification And Characterization Of A Novel Cerebrovascular Amyloid Protein
AG		Kang et al. (1987) Nature 325:733-736.
		The precursor of Alzheimer's disease amyloid A4 protein resembles a cell-surface receptor
AH		Roher et al. (1993) Proc. Natl. Acad. Sci. USA 90:1086-840.
		$\beta$ -Amyloid-(1-42) is a major component of cerebrovascular amyloid deposits: Implications for the pathology of Alzheimer disease
AI		Iwatsubo et al. (1994) Neuron 13:45-53.
		Visualization of A $\beta$ 42(43) and A $\beta$ 40 in Senile Plaques with End-Specific A $\beta$ Monoclonals: Evidence That an Initially Deposited Species Is A $\beta$ 42(43)
Examiner		Date Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

**LIST OF PATENTS AND  
PUBLICATIONS FOR APPLICANT'S  
INFORMATION DISCLOSURE  
STATEMENT**

Applicant: P. SEUBERT et al.

Filing Date:  
June 6, 1995

Group:

**OTHER ART (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)**

AJ	Selkoe (1994) J. Neuropath. and Exp. Neurol. 53:438-447.	
	Alzheimer's Disease: A Central Role for Amyloid	/
AK	Selkoe (1991) Neuron 6:487.	
	The Molecular Pathology of Alzheimer's Disease	/
AL	Goate et al. (1991) Nature 349:704-706.	
	Segregation of a missense mutation in the amyloid precursor protein gene with familial Alzheimer's disease	/
AM	Chartier Harlin et al. (1991) Nature 353:844-846.	
	Early-onset Alzheimer's disease caused by mutations at codon 717 of the $\beta$ -amyloid precursor protein gene	/
AN	Murrell et al. (1991) Science 254:97-99.	
	A Mutation in the Amyloid Precursor Protein Associated with Hereditary Alzheimer's Disease	/
AO	Suzuki et al. (1994) Science 264:1336-1340.	
	An Increased Percentage of Long Amyloid $\beta$ Protein Secreted by Familial Amyloid $\beta$ Protein Precursor ( $\beta$ APP <sub>717</sub> ) Mutants	/
AP	Mullan et al. (1992) Nature Genet 1:345-347.	
	A pathogenic mutation for probable Alzheimer's disease in the APP gene at the N-terminus of $\beta$ -amyloid	/
AQ	Glennner and Wong (1984) Biochem. Biophys. Res. Commun. 122:1121-1135.	/
	Alzheimer's Disease And Down's Syndrome: Sharing Of A Unique Cerebrovascular Amyloid Fibril Protein	/
AR	Masters et al. (1985) Proc. Natl. Acad. Sci USA 82:4245-4249.	
	Amyloid plaque core protein in Alzheimer disease and Down syndrome	/
AS	Selkoe et al. (1986) J. Neurochem. 46:1820-1834.	
	Isolation of Low-Molecular-Weight Proteins from Amyloid Plaque Fibers in Alzheimer's Disease	/
Examiner		Date Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO-1449 (Modified)

Docket No.:  
15270-002120Serial No.:  
08/466,554

**LIST OF PATENTS AND  
PUBLICATIONS FOR APPLICANT'S  
INFORMATION DISCLOSURE  
STATEMENT**

Applicant: P. SEUBERT et al.

Filing Date:  
June 6, 1995

Group:

**OTHER ART (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)**

AT	Joachim et al. (1988) Brain Research 474:100-111.
	Protein chemical and immunocytochemical studies of meningo-vascular $\beta$ -amyloid protein in Alzheimer's disease and normal aging
AU	Hilbich et al. (1991) J. Mol. Biol. 228:149-163.
	Aggregation and Secondary Structure of Synthetic Amyloid $\beta$ A4 Peptides of Alzheimer's Disease
AV	Barrow and Zagorski (1991) Science 253:179-182.
	Solution Structures of $\beta$ Peptide and Its Constituent Fragments: Relation to Amyloid Deposition
AW	Burdick et al. (1992) J. Biol. Chem. 267:546-554.
	Assembly and Aggregation Properties of Synthetic Alzheimer's A4/ $\beta$ Amyloid Peptide Analogs
AX	Palmert et al. (1989) Proc. Natl. Acad. Sci. USA 86:6338-6342.
	The $\beta$ -amyloid protein precursor of Alzheimer disease has soluble derivatives found in human brain and cerebrospinal fluid
AY	Weidemann et al. (1989) Cell 57:115-126.
	Identification, Biogenesis, and Localization of Precursors of Alzheimer's Disease A4 Amyloid Protein
AZ	Henriksson et al. (1991) J. Neurochem. 56:1037-1042.
	Analysis and Quantitation of the $\beta$ -Amyloid Precursor Protein in the Cerebrospinal Fluid of Alzheimer's Disease Patients with a Monoclonal Antibody-Based Immunoassay
BA	Palmert et al. (1990) Neurology 40:1028-1034.
	Soluble derivatives of the $\beta$ amyloid protein precursor in cerebrospinal fluid: Alterations in normal aging and in Alzheimer's disease
BB	Seubert et al. (1993) Nature 361:260-263.
	Secretion of $\beta$ -amyloid precursor protein cleaved at the amino terminus of the $\beta$ -amyloid peptide
Examiner	
Date Considered	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

**LIST OF PATENTS AND  
PUBLICATIONS FOR APPLICANT'S  
INFORMATION DISCLOSURE  
STATEMENT**

Applicant: P. SEUBERT et al.

Filing Date:  
June 6, 1995

Group:

**OTHER ART (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES ETC.)**

BC	Podlisny et al. (1990) Biochem. Biophys. Res. Commun. 167:1094-1101
	Detection Of Soluble Forms Of The $\beta$ -Amyloid Precursor Protein In Human Plasma
BD	Rumble et al. (1989) N. Engl. J. Med. 320:1446-1452.
	Amyloid A4 Protein And Its Precursor In Down's Syndrome And Alzheimer's Disease
BE	Schlossmacher et al. (1992) Neurobiol. Aging 13:421-434.
	Detection of Distinct Isoform Patterns of the $\beta$ -Amyloid Precursor Protein in Human Platelets and Lymphocytes
BF	Wong et al. (1984) Proc. Natl. Acad. Sci USA 82:8729-8732.
	Neuritic plaques and cerebrovascular amyloid in Alzheimer disease are antigenically related
BG	Selkoe (1986) Neurobiol. Aging 7:425-432.
	Altered Structural Proteins in Plaques and Tangles: What do They Tell Us About the Biology of Alzheimer's Disease?
BH	Pardridge et al. (1987) Biochem. Biophys. Res. Commun. 145:241-248.
	High Molecular Weight Alzheimer's Disease Amyloid Peptide Immunoreactivity In Human Serum And CSF Is An Immunoglobulin G
BI	Joachim et al. (1989) Nature 341:226-230.
	Amyloid $\beta$ -protein deposition in tissues other than brain in Alzheimer's disease
BJ	Selkoe et al. (1989) Neurobiol. Aging 10:387-395.
	Molecular Pathology of Amyloidogenic Proteins and the Role of Vascular Amyloidosis in Alzheimer's Disease
BK	Wisniewski, Alzheimer's disease, eds. Becker and Giacobini, Taylor and Francis, N.Y. pg. 206, 1990.
	Alzheimer Disease, A Current Research in Early Diagnosis
Examiner	
Date Considered	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO-1449 (Modified)

Docket No.:  
15270-002120Serial No.:  
08/466,554

**LIST OF PATENTS AND  
PUBLICATIONS FOR APPLICANT'S  
INFORMATION DISCLOSURE  
STATEMENT**

Applicant: P. SEUBERT et al.

Filing Date:  
June 6, 1995

Group:

**OTHER ART (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES ETC.)**

BL	Kim and Wisniewski, Techniques in Diagnostic Pathology, eds, Bullock et al., Academic Press, Boston pg. 106.
	Techniques in Diagnostic Pathology
BM	Seubert et al. (1992) Nature 359:325-327.
	Isolation and quantification of soluble Alzheimer's $\beta$ -peptide from biological fluids
BN	Vigo-Pelfrey et al. (1993) J. Neurochem. 61:1965-1968.
	Characterization of $\beta$ -Amyloid Peptide from Human Cerebrospinal Fluid
BO	Esch et al. (1990) Science 248:1122
	Cleavage of Amyloid $\beta$ Peptide During Constitutive Processing of Its Precursor
BP	Anderson et al. (1991) Neuro Science Lett. 128:126-128.
	Exact cleavage site of Alzheimer amyloid precursor in neuronal PC-12 Cells
BQ	Ponte et al. (1988) Nature 331:525-527.
	A new A4 amyloid mRNA contains a domain homologous to serine proteinase inhibitors
BR	Tanzi et al. (1988) Nature 331:528-530.
	Protease inhibitor domain encoded by an amyloid protein precursor mRNA associated with Alzheimer's disease
BS	Kitaguchi et al. (1988) Nature 331:530-532.
	Novel precursor of Alzheimer's disease amyloid protein shows protease inhibitory activity
BT	Hardy (1992) Nature Genet. 1:233-234.
	Framing $\beta$ -amyloid
BU	Z.S. Khachaturian (1985) Arch. Neurol. 42:1097-1105.
	Diagnosis of Alzheimer's Disease
Examiner	
Date Considered	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<b>LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT</b>	Docket No.:	Serial No.:
	15270-002120	08/466,554
	Applicant: P. SEUBERT et al.	
	Filing Date:	Group:
Jun 6, 1995		

**OTHER ART (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES ETC.)**

		Vandermeeren et al. (1993) J. Neurochem. 61:1828-1834.
BV		Detection of $\tau$ Proteins in Normal and Alzheimer's Disease Cerebrospinal Fluid with a Sensitive Sandwich Enzyme-Linked Immunosorbent Assay
		Mann et al. (1992) Neurodegeneration 1:201-295.
BW		The time course of pathological events in Down's Syndrome with particular reference to the involvement of microglial cells and deposits of $\beta$ /A4
		Price et al. (1991) Neurobiol. Aging 12:295-312.
BX		The Distribution of Tangles, Plaques and Related Immunohistochemical Markers in Healthy Aging and Alzheimer's Disease
		Khatoun et al. (1992) J. Neurochem 59:750-753.
BY		Brain Levels of Microtubule-Associated Protein $\tau$ Are Elevated in Alzheimer's Disease: A Radioimmuno-Slot-Blot Assay for Nanograms of the Protein
		Goedert et al. (1989) Neuron 3:519-526.
BZ		Multiple Isoforms of Human Microtubule-Associated Protein Tau: Sequences and Localization in Neurofibrillary Tangles of Alzheimer's Disease
		M. Goedert (1993) TINS 16:460-465.
CA		Tau protein and the neurofibrillary pathology of Alzheimer's disease
		Knops et al. (1991) J. Cell Biol. 114:725-733.
CB		Overexpression of Tau in a Nonneuronal Cell Induces Long Cellular Processes
		Hachinski et al. (1975) Arch. Neurol. 32:632-637.
CC		Cerebral Blood Flow in Dementia
Examiner		Date Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO-1449 (Modified)	Docket No.:	Serial No.:
	15270-002120	08/466,554
	Applicant: P. SEUBERT et al.	
	Filing Date:	Group:
June 6, 1995		

**OTHER ART (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)**

		McKhann et al. (1984) Neurology 34:939-944.
	CD	Clinical diagnosis of Alzheimer's disease: Report of the NINCDS-ADRDA Work Group under the auspices of Dept. of Health and Human Services Task Force on Alzheimer's Disease
	CE	The Lund and Manchester Groups (1994) J Neurol Neurosurg Psychiatr 57:416-418.
		Clinical and neuropathological criteria for frontotemporal dementia
	CF	E.S. Kawasaki in PCR Protocols: A guide to methods and applications. Academic Press, Inc. NY (1990) pp. 146-152.
		Sample Preparation From Blood, Cells, And Other Fluids
	CG	Wenham et al. (1991) Lancet 337:1158-1159.
		Apolipoprotein E. Genotyping by one-stage PCR
	CH	American Psychiatric Association, Committee on Nomenclature and Statistics: Diagnostic and Statistical
		Manual of Mental Disorders: Revised Third Edition, Washington D.C. Am. Psych Associ. (1987)
		(copy not enclosed) NOT CONSIDERED NO COPY PROVIDED
Examiner	/Patricia Duffy/	
Date Considered	05/01/2008	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.